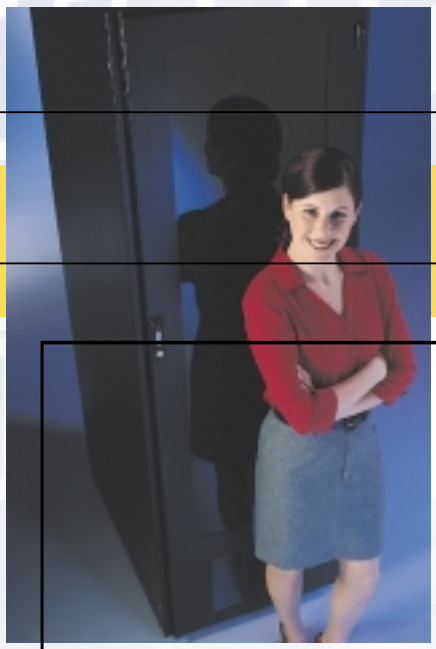
Liebert®

Foundation

IT PROTECTION SYSTEM



EMERSON
Network Power

Too Much Equipment, Too Little Protection

While sensitive electronics have changed over the past years, one thing remains constant — excessive heat, poor power quality and unauthorized access can damage or impair the operation of vital systems and peripherals. The answer lies in finding the correct enclosure system to house critical components for both small and large facilities. There are, however, several key issues to consider before specifying one:

Evolving Technology

Computer equipment can change size and shape very rapidly. This means an enclosure you buy today must be suited for the equipment you buy a year from now.

Changes in Usage And Growth

The need to quickly change equipment locations or configurations can be a real nightmare if a rack is not flexible or if there is no enclosure at all. Cabling presents still another challenge. It is important to keep wiring orderly and easy to trace. In the event of a malfunction of crossed wire, you could spend half your time just trying to determine which cable is at fault.

The Need To Keep It Organized And Safe

The downsizing and decentralization of computing,
networking and telecommunications equipment has reduced the space required for these systems but created another dilemma…where do we put it all? And what about security? At best, an important piece of equipment could be accidentally disconnected. At worst, a system could be deliberately compromised.

Conditions Must Be Optimal

Often very critical pieces of networking equipment are exposed and unprotected. In some cases, this equipment may be housed in an equipment closet or other small room. But what about proper ventilation and cooling for that equipment? Overheated components may malfunction or shutdown completely.

If this looks all too familiar...
you have a problem

The Solution That Gives You Exactly The Right Aumont Of Protection And Support

Foundation stands out as the solution in three key areas:

Adaptive

Foundation's highly flexible design accommodates varied support installation and application requirements. It is designed to provide easy access for equipment changes and relocation.

Comprehensive

Foundation features Liebert's full line of computer-grade support systems, including environmental, power, monitoring and security. Only Liebert has the capability to integrate all this support. Foundation provides "one stop shopping" for protection with single-source responsibility and complete solutions — now and in the future.

Scalable

Foundation has the flexibility to accommodate both changes in equipment and future growth. It allows you to start with a basic rack/enclosure configuration and scale up in features and level of protection – all the way to a Mini Computer Room. The system also provides significant cost savings by permitting you to maintain and build upon your original investment.

The Answer No Matter What Your Needs

The Foundation integration system is more than" just a rack"— it is the "foundation" of a mini-computer room. It is designed to deliver maximum flexibility today and to comprehensively accommodate future support needs in the rapidly changing network equipment environment.

It can start simply as a basic integration system to house and organize network components. Or you can specify it at any level of protection up to the self-contained MCR (Mini Computer Room) by adding support systems including computer-grade air conditioning, UPS, monitoring capabilities and security features. The beauty of the system is that you don't have to do it all at once. These features can be incorporated from the beginning or added at a later time to help meet both your current and future requirements.

Envolving Design

The Foundation system provides an organized, secure, controlled environment for your sensitive electronic equipment.

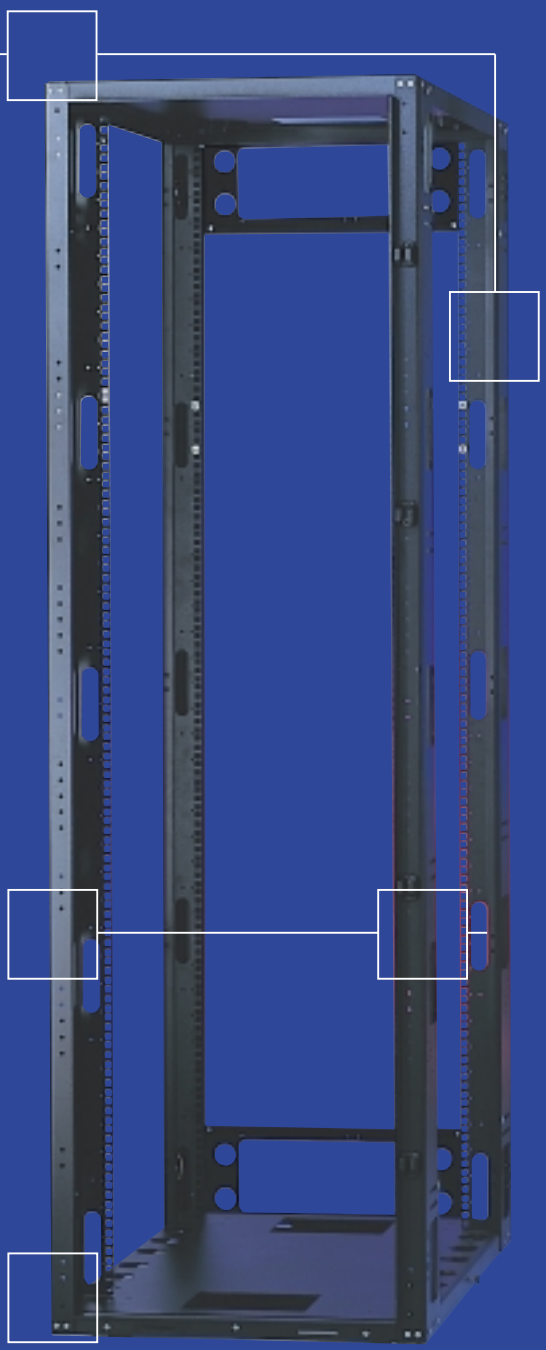
A few of the major improvements to the Foundation over previous enclosure designs are:

- Adjustable Rack Rails
- Reversible Hinged Door
- Improved Cable Management
- Easy Access Side Panels
- Multiple Door Options
- Complete Upgradability
- Top Or Bottom Mount ECM Unit
- Lower Noise Level
- Energy Saving Features

Adjustable shelves are designed to hold free-standing equipment.

Enclosure System

The heavy duty Foundation frame is 12-gauge steel construction. It can accomodate shelf or rack mounted equipment on either 19 or 23 inch rails. The front and rear vertical frame members incorporate internal mounting rail options and provide space to route and manage cabling.



Cable Access
Provides entrance points for cable feeds to enclosure: Top, bottom and side to side.

Horizontal cable rings offers efficient positioning of cables to allow easier identification and reduce interior clutter. Vertical cable rings also available.

Adjustable rack rails provide flexibility in mounting components. Enclosures feature **threaded or square** rack rail holes and rack unit position markers.

A center mount rack rail is available providing full front to rear adj ustment.

Total Protection Under One Roof

The Foundation MCR (Mini Computer Room) provides the peace-of-mind that comes from knowing that Liebert's expertise and experience are protecting your vital network equipment and the integrity of your data.

Based on the industry award winning Little Glass House design, the Foundation MCR self-contained integration system brings together all of the elements necessary to ensure the long-term viability of network components or other critical electronics. A load-sized, computer-grade air conditioner can be located at either the top or bottom of the enclosure, driving cool air through sensitive equipment on all levels. A back-up cooling system ensures environmental security.Power is supplied and protected through either a Liebert GXT 2U on-ine UPS or a PowerSure Interactive UPS. And with a built-in Liebert SiteNet Integrator, the Foundation MCR becomes an intelligent network peripheral, capable of monitoring conditions and initiating pre-set actions when problems arise.

Critical Features Designed To Protect Critical Equipment

Capabilities

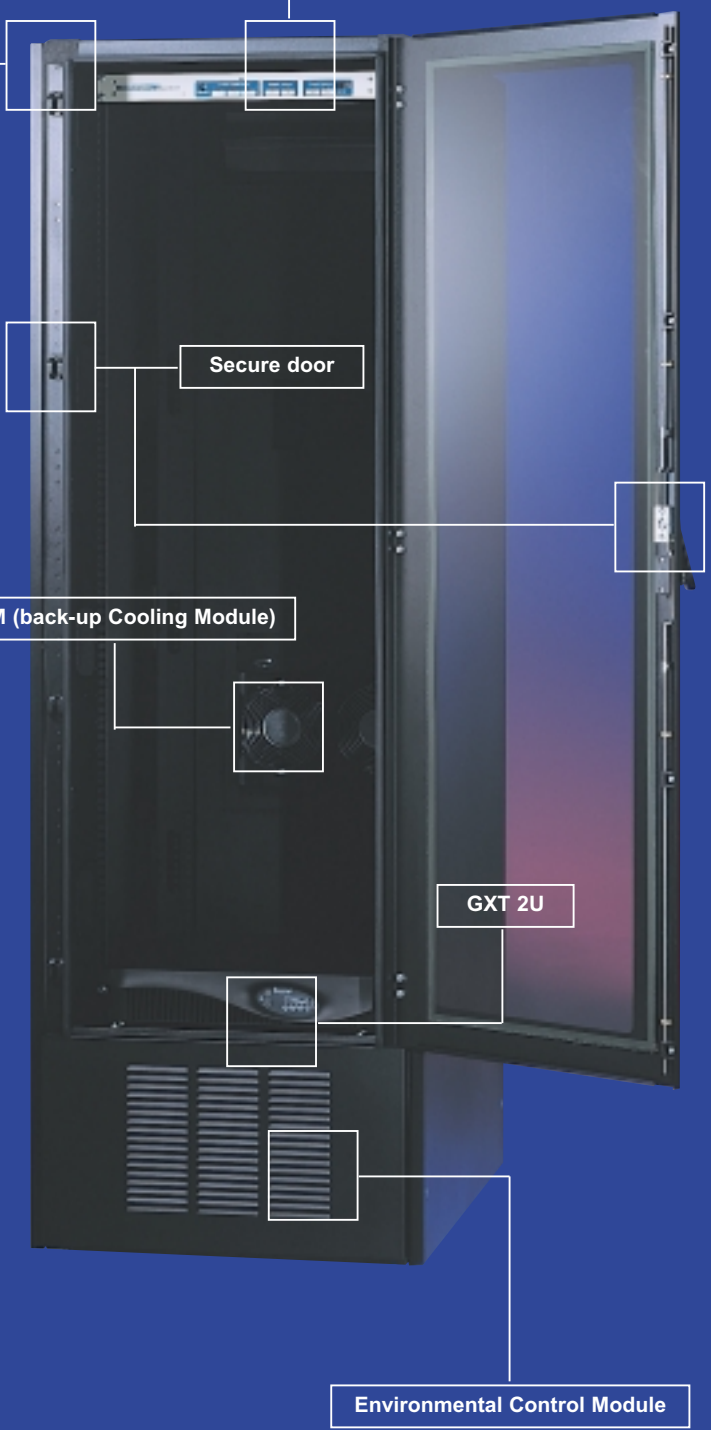
The capabilities and features of the Foundation MCR are designed to provide maximum protection for systems housed within the enclosure:

- **Comprehensive, integrated Liebert design -** combines computer-grade support systems, including cooling, power, monitoring and security into a single, pre-tested system.
- **Mobile design for quick deployment -** let' s you put a self-contained mini-computer room right where you need it, today or tomorrow.
- **Agency approved as a system -** pre-qualified and ready for installation

Features

- **ECM (Environmental Control Module) -** computer-grade air conditioning load matched to UPS.
- **BCM (Back-up Cooling Module) -** provides cooling in the event of a power loss or can be utilized to reduce energy consumption with the BCM Energy Saver Control.
- **Liebert On-Line or Line Interactive UPS -** provides back-up power protection.
- **SiteNet Integrator -** alarms and status monitoring.

Mini Computer Room



Sealed doors
specially designed rubber gasket provides **NEMA12 sealing** protection.

An **external keybord tray** option provides access to secured equipment without interrupting the internal conditions.

Secure door- lockable door provides an extra measure of security by limiting access to critical equipment. A multi-point latch with key lock is provided.

Sealed entrance-cable raceway provides a means for cable access to a “sealed” Foundation enclosure while maintaining the seal.

Creating The Perfect Environment For Your Critical Systems

Only Liebert can offers a real choice of computer-grade cooling options designed to meet your most demanding protection needs.

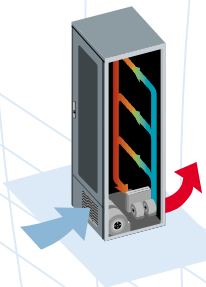
For systems without ECM air conditioning, **fan cooling** provides enhanced heat removal. Either 1 or 2 “low noise” or “high ambient” fans can be factory installed - up to 5 fans can be installed in the field. Fans can be located either on top or back panel of the Foundation.

Your Foundation Integration System is available with a **Liebert ECM (Environmental Cooling Module).** The ECM is a self-contained, air conditioning system that provides round-the-clock cooling to components housed within a Foundation enclosure. The ECM features low-noise operation, suitable for use in occupied spaces and includes an automatic condensate reevaporation system. A hot gas by-pass provides automatic load matching and enhanced ECM life. All systems utilize “green” R-407C refrigerant. A **BCM (Back-up Cooling Module)** can be added to the ECM to insure cooling in emergency conditions.

Exclusive Uninterruptible Environmental Support

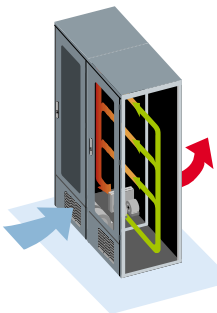
Internal ECM

The integrated ECM –Enclosure designpromotes the best air circulation to prevent hotspots within the enclosure. Inside andoutside air are isolatedfor maximum cleanliness.



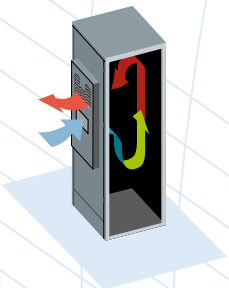
Air Distribuition

Exclusive ECM conditioned air distribution duct ensures uniform air flow for multiple enclosures.



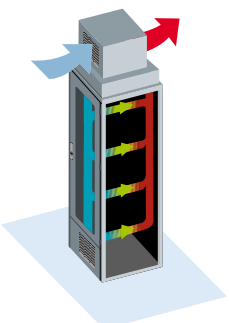
Back-Up Cooling

During high internal temperature or power outage conditions, the BCM (BackUp CoolingModule) - powered by the enclosure’s UPS -is automatically activated, drawing in filtered outside air to ensure continuous air flow to protected equipment.



External ECM

The top mounted ECM allows maximum use of internal rack space or can be used with the internal/rack mount ECM to double cooling capacity.



Environmental

Panch are insulated on ECM supported system enhancing thermal and sound performance

An optional **top mounted ECM** allows for maximum use of internal rack space and can be used to double capacity with internal/rack mount ECM.

Sealed doors
Provides entrance Points for cable Feeds to enclosure: Top, bottom and Side to side.

BCM (Back-Up Cooling Module) provides cooling during a loss of utility power or high internal temperature conditions.

A **BCM (Back-up Cooling Module)** can be added to the ECM to insure cooling in emergency conditions.

The optional fan package provides enhanced cooling. The fan is either “low noise” or “high ambient” design. Up to five fans can be installed. A **fan filter option** is available to provide basic air intake filtration.

Separate power connections for ECM and units.

The Foundation ECM drives cool air through sensitive equipment on all levels.

Power And Control For Continuous System Protection

On-line UPS power protection — plus complete monitoring and communications capabilities - give your Foundation system the highest level of intelligent operation.

Power protection and battery back-up

State-of-the-art power protection is available in the Foundation integration system through the addition of a Liebert GXT 2U on-line uninterruptible power supply (UPS) system. As a true on-line UPS, the GXT 2U includes power factor correction, internal batteries, external battery connectibility, and internal automatic and manual bypass capability. An additional battery pack for extra battery runtime is also offered. The UPS and battery pack are mounted inside the enclosure with a mounting bracket for support and relocation as required.

Monitoring and communications

Complete monitoring and communications capability can be built into the Foundation system through the use of the Liebert SiteNet Integrator. It is available in Ethernet version and can be enhanced with optional input sensors. These sensors include internal and external temperature and humidity, door sensor, high temperature alarm, smoke detector and water detection. For enhanced UPS communications and control, the Intellislot SNMP/Web Card will deliver SNMP and web-management communications capability to the GXT 2U unit contained in your Foundation system.

This feature will provide flexibility in how you monitor and control your UPS over the network.

Remote Power Control

The Load Control Module (LCM) is offered as an installed, add-on package to the Ethernet SiteNet Integrator. With the LCM, you can conduct remote shutdowns and cold restarts automatically. The LCM provides remote power management of up to six pieces of connected equipment. With the LCM, you can cycle power to reboot equipment or turn off connected systems by direct control or shut down based on pre-set alarm conditions.

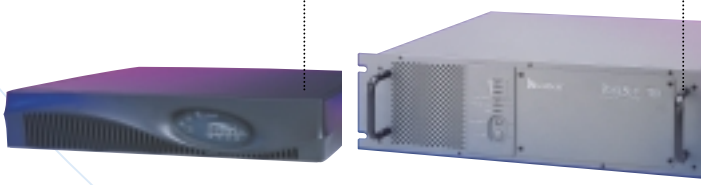
UPS & Monitoring System

With the bundled Liebert SiteNet Integrator, your foundation system becomes an intelligent network node. It is capable of monitoring conditions such as temperature and humidity, as well as initiating user-defined actions when problems arise.

Your Foundation system can also be supplied with Liebert MultiLink shutdown software. This package automatically shuts down computer operating systems in a smooth and orderly manner if UPS battery capacity runs low.

The compact **GXT 2U** on-line uninterrruptible power supply (UPS) system can be bundled in the Foundation enclosure to provide advanced power conditioning plus battery back-up. A battery pack can also be added for extra runtime.

Your Foundation enclosure can also be bundled with the Liebert PowerSure® Interactive UPS. With its advanced line-interactive technology, this unit filters utility power to eliminate spikes, noise and other transients. It also containsa voltage“buck and boost” circuit that corrects input voltage - without switching to battery back up.



Door ajar sensor-option includes factory installed micro switches mounted on the front and rear doors of the Foundation enclosure to detect an open door. For use with the SiteNet Integrator.

FOUN/E.1/10/01/Conte+Oggioni+Partners

TECHNICAL DATA

FOUNDATION Enclosure

Part Number	Description
HK7800000S-EU1	w19"h42U(1956)d750 rack mount enclosure / Plexiglas Front & Sheetmetal Rear Doors / Side Panels
HK7800000S-EU1S	w19"h42U(1956)d750 rack mount enclosure / Plexiglas Front & Sheetmetal Rear Doors / No Side Panels
HK7880000S-EU1	w19"h42U(1956)d953 rack mount enclosure / Plexiglas Front & Sheetmetal Rear Doors / Side Panels
HK7880000S-EU1S	w19"h42U(1956)d953 rack mount enclosure / Plexiglas Front & Sheetmetal Rear Doors / No Side Panels
HK7880000SPEU1	w19"h42U(1956)d953 rack mount enclosure / Perforated Front & Rear Doors / Side Panels
HK7880000SPEU1S	w19"h42U(1956)d953 rack mount enclosure / Perforated Front & Rear Doors / No Side Panels

FOUNDATION MCR (Mini Computer Room)

Part Number	Description
HD788CC00S-EU1	(w19"h42U(1956)d953 rack mount sealed enclosure, ECM2000LR, BCM2000L, No UPS)
HD7880000S-EU1	(w19"h42U(1956)d953 rack mount sealed enclosure, ECM Cluster Extension Duct, NO Side Panels)

ENCLOSURE DIMENSIONS

Model	Overall Frame Dimensions			Rack		Adjustable Rack Depth	Internal Rack Height	
	Height*	Width**	Depth***	Width	Available Width	B****		
	In. (mm)			In. (mm)	In. (mm)	Max In. (mm)	Rack U	In. (mm)
H_780	77 (1956)	23.5 (597)	29.5 (750)	19 (483)	17.8 (450)	22.5 (571.5)	42	73.5 (1867)
H_788	77 (1956)	23.5 (597)	37.5 (953)	19 (483)	17.8 (450)	30.5 (775)	42	73.5 (1867)

*Casters add 1,5" to overall Height of Frame = 2000mm
** Side Panels add 0,75" each to overall width of frame
*** Doors add 0,25" each to overall depth of frame, BCM Option adds an additional 3" to overall depth of frame
**** Max Dimension is for ex-factory configuration. Rails can be inverted to provide an additional 4" of adjustment

Mounting Options

Enclosure/MCR	Fixed Shelf w19"d30"/38"	Pullout Shelf d30"/38"	Fixed Rails	Keyboard Tray	Mounting Clipnuts and Screws	
					10 - 32 Thread	M6 Thread
H_780	153018G1L	153009G1L	201193G1L	155942G1	201000G1	201000G2
H_788	153018G1L	153009G3L	201193G1L	155942G2	201000G1	201000G2

General Options

Enclosure/MCR	Internal Light	Sealed Entrance		Cable Rings		Cluster Kit	Stabilisation Plate
		2" hole	4" hole	Vertical	Horizontal		
H_780, H_788	163527G3	201038G1L	201038G2L	201048G1L	201049P1	201033G1L	201067G1L

Monitoring Options

Enclosure/MCR	SiteNet Integrator	Load Control Module (SiteNet Interface Only)	Internal Temp/Humid Opt. (SiteNet Interface Only)	External Temperature/Humid Opt. (SiteNet Interface Only)	Door Ajar Sensor Opt. (SiteNet Interface)	High Temperature Alarm*	Water Detected Opt.*	Power Supply for High Temp. & Water Detect. Option	Smoke Detector Opt. (requires High Temperature Alarm Option)
H_780, H_788	SITENET-EX230	LCM-IEC-10	163787G2L	163784G1L	168605G1L	163785G1L	163520G1L	163786G1L	163786G1L

All monitoring options can be field installed (including installation instructions and/or drawings/sketches as required)
*Alarm is powered by either the ECM or BCM - if neither ECM or BCM is available a Power Supply option must be selected

Cooling Options

Enclosure/MCR	FAN Cooling Systems			ECM Cooling System		
	FAN 1000 Low Noise 50Hz	FAN 1000H High Ambient 50Hz	FAN Block-off Assembly 50Hz	ECM Heat Rejection Fan 50Hz	Top Mount ECM for 1000 VA UPS *	Top Mount ECM for 1000 VA UPS *
HK780, HK788	163796G2L	163796G4L	201592G1L	163521P2	168124G6	168124G8
HD788	-	-	-	163521P2	168124G6	168124G9

*Requires Stabilizing Plate option (201067G1L)

PART NUMBERS AND CONFIGURATIONS LISTED ABOVE ARE AVAILABLE DIRECTLY FROM STOCK - MORE OPTIONS AND CONFIGURATIONS ARE ALSO AVAILABLE ON DEMAND, PLEASE REFER TO YOUR LIEBERT-HIROSS CONTACT

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